under the supervision of an independent laboratory accepted by the Coast Guard under subpart 159.010 of this chapter.

§ 163.003–9 Approval procedure.

(a) *General.* A pilot ladder is approved by the Coast Guard under the procedures in subpart 159.005 of this chapter.

(b) *Approval testing.* Each approval test must be conducted in accordance with § 163.003–21.

(c) *Approval of alternatives.* A pilot ladder that does not meet the materials, construction, or performance requirements of this subpart may be approved if the application and any approval tests prescribed by the Commandant in place of or in addition to the approval tests required by this subpart, show that the alternative materials, construction, or performance is at least as effective as that specified by the requirements of this subpart. The Commandant may also prescribe different production tests if the tests required by this subpart are not appropriate for the alternative ladder configuration.

§ 163.003–11 Materials.

(a) *Suspension members.* Each suspension member must be mildew-resistant manila rope or a dacron polyester rope with a polypropylene core of a color that contrasts with the dacron. Each suspension member must have a breaking strength of not less than 24 kN (5,400 lb.) and a nominal circumference of not less than 60 mm (2¼ in.).

(b) *Wooden parts.* Each wooden part of a pilot ladder must be hardwood that is free from knots and any other defects affecting its strength or durability.

(c) *Wood preservative.* After each wooden part is formed and finished, it must be treated with water-repellant wood preservative that is properly applied.

(d) *Molded steps.* Each step made of molded construction must be rubber or resilient plastic.

(e) *Metal parts.* Each metal fastener must be made of a corrosion resistant metal. Each other metal part must be made of corrosion-resistant metal or of steel galvanized by the hot dip process after the part is formed.

(f) *Plastics.* Each plastic material must be of a type that retains at least 30 percent of its original tensile strength and at least 80 percent of its original impact strength when subjected to the one year outdoor weathering test described in ASTM D 1435.

§ 163.003–13 Construction.

(a) *General.* Each pilot ladder must have two suspension members on each side. Each step in the ladder must be supported by each suspension member.

(b) *Suspension member.* The suspension members of a pilot ladder must meet the following requirements:

(1) Each suspension member must be continuous from the top of the ladder to the bottom and must not be painted or otherwise coated or covered.

(2) Except as provided in paragraph (g) of this section—

(i) The top end of one suspension member on each side of the ladder must extend at least 3 m (10 ft.) beyond the top ladder step; and

(ii) The top ends of the other suspension members must be just above the top step and must have an eye splice or thimble large enough to fit two passes of a suspension member.

(3) The top end of each suspension member that does not have an eye splice or thimble must be served or treated to prevent fraying.

(4) Each pair of suspension members must be clamped together both above and below each step. Marline seizing may not be used.

(5) The clear space between the suspension members on one side of a ladder and those on the other side must be at least 400 mm (16 in.), but not more than 480 mm (19 in.).

(6) The suspension members must not have fittings at the bottom of the ladder that can be used for attaching additional ladder sections.

(c) *Steps.* Pilot ladder steps must meet the following requirements:

(1) The four lowest steps must be molded steps and the rest of the steps must be either wooden or molded steps.

(2) The top face of each step must have a rectangular surface that is at least 115 mm (4½ in.) wide with a non-skid surface that does not retain water. Adhesive non-skid sheets may not be used. (For example, a suitable surface

for a step is one that has grooves at least 3 mm (⅛ in.) deep cut in a diamond pattern so that water runs off the edge of the step. Non-skid grit is applied directly to the step surface extending to almost the full width of the step.)

(3) Each step at its thinnest point must be at least 25 mm (1 in.) thick and in determining this thickness, the depth of the grooves in the non-skid surface and the diameter of any hole extending from one side of the step to the other must not be counted.

(4) Each step must be at least 480 mm (19 in.) long.

(5) Each step must be designed so that it can be removed and replaced without unstringing the ladder. If special replacement steps are made to meet this requirement, the replacement steps must meet the requirements of this section.

(6) If a step has grooves for its suspension members, the grooves must be in the sides of the steps.

(7) The spacing from the top of one step to the top of the next step must be uniform and this spacing must be between 300 mm (12 in.) and 350 mm (13¾ in.).

(8) Each step must be a bright orange color, except that this color is not required for the non-skid surface. If a step is painted, it must be painted with a two-part epoxy paint intended for marine use, or a paint of equivalent durability.

(9) The height of each device attached to the step for securing the suspension members must not be more than one-half the width of the step so that the step is not prevented from rolling if the ladder is caught between a pilot boat and the hull of the vessel.

(10) Each replacement step must be either white or yellow instead of the orange color required under paragraph (c)(8) of this section, and must have the special marking required in §163.003–25(b).

(d) *Spreaders.* Each pilot ladder with 5 or more steps must have one or more spreaders that meet the following requirements:

(1) Each spreader must be at least 1.8 m (70 in.) long.

(2) The spreaders must be positioned at intervals of not more than 9 steps.

(3) The lowest spreader on a ladder must be on the fifth step from the bottom.

(e) *Fasteners.* Each fastening device securing a part of a pilot ladder must have a means to prevent the device from loosening.

(f) *Workmanship.* A pilot ladder must not have splinters, burrs, sharp edges, corners, projections, or other defects that could injure a person using the ladder.

(g) *Special arrangements for pilot hoists.* Each pilot ladder produced for use with an approved pilot hoist must have at least 8 steps. The top ends of its suspension members need not have an eye splice or thimble or be arranged as required in paragraph (b) of this section if necessary to permit attaching the ladder to fittings of a particular pilot hoist. The spreader required in paragraph (d) of this section may be omitted from an 8 step ladder for a pilot hoist.

[CGD 74–140, 46 FR 63291, Dec. 31, 1981, as amended by CGD 79–032, 49 FR 25456, June 21, 1984]

§163.003–15 Performance.

(a) Each pilot ladder must be capable of being rolled up for storage.

(b) Each ladder when rolled up must be able to unroll freely and hang vertically.

(c) Each suspension member must be arranged so that, when the ladder is in use on a vessel, the suspension member cannot come in contact with the vessel's side.

(d) Each step must be arranged so that it can bear on the side of the vessel when the ladder is in use.

§163.003–17 Strength.

(a) Each pilot ladder must be designed to pass the approval tests in §163.003–21.

(b) [Reserved]

§163.003–21 Approval tests.

(a) *General.* Each approval test must be conducted on a ladder of the longest length for which approval has been requested. If the ladder fails one of the tests, the cause of the failure must be identified and any needed design changes made. After a test failure and any design change, the failed test, and